



## Complete Summary

---

### TITLE

Hip fracture: risk adjusted rate of in-hospital hip fracture among acute care inpatients aged 65 years and over, per 1,000 discharges.

### SOURCE(S)

Canadian Institute for Health Information (CIHI). Health indicators 2008: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008 May. 39 p.

## Measure Domain

### PRIMARY MEASURE DOMAIN

Outcome

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the risk-adjusted rate of in-hospital hip fracture among acute care inpatients age 65 years and over, per 1,000 discharges.

### RATIONALE

Proposed by the Agency for Healthcare Research and Quality (AHRQ) and based on the Complications Screening Program, this indicator represents a potentially preventable complication resulting from an inpatient stay in acute care facility. Variation in the rates may be attributed to numerous factors, including hospital processes, environmental safety, and availability of nursing care. High rates may prompt investigation of potential quality of care deficiencies.

### PRIMARY CLINICAL COMPONENT

In-hospital hip fracture

#### **DENOMINATOR DESCRIPTION**

Total number of discharges among inpatients age 65 years and older (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### **NUMERATOR DESCRIPTION**

Total number of discharges coded with in-hospital hip fracture for patients age 65 and over

### **Evidence Supporting the Measure**

#### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

### **Evidence Supporting Need for the Measure**

#### **NEED FOR THE MEASURE**

Use of this measure to improve performance  
Variation in quality for the performance measured

#### **EVIDENCE SUPPORTING NEED FOR THE MEASURE**

Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 96 p.

### **State of Use of the Measure**

#### **STATE OF USE**

Current routine use

#### **CURRENT USE**

Federal health policymaking  
Internal quality improvement  
National reporting

### **Application of Measure in its Current Use**

#### **CARE SETTING**

Hospitals

**PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Measure is not provider specific

**LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Regional

**TARGET POPULATION AGE**

Age greater than or equal to 65 years

**TARGET POPULATION GENDER**

Either male or female

**STRATIFICATION BY VULNERABLE POPULATIONS**

Unspecified

**Characteristics of the Primary Clinical Component****INCIDENCE/PREVALENCE**

Nearly 1 in 1,000 seniors admitted to hospital in Canada, outside Quebec, fracture a hip during their stay.

**EVIDENCE FOR INCIDENCE/PREVALENCE**

Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 96 p.

**ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

**BURDEN OF ILLNESS**

Unspecified

**UTILIZATION**

Unspecified

**COSTS**

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Safety

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Discharges among inpatients age 65 years and older

### DENOMINATOR SAMPLING FRAME

Patients associated with provider

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Total number of discharges among inpatients age 65 years and older

#### Exclusions

Fracture of bone following insertion of orthopaedic implant, joint prosthesis, or bone plate (International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canadian version [ICD-10-CA] code M96.6) and in-hospital hip fracture coded in conjunction with an external cause of injury code of "misadventure during surgical or medical care" have been excluded because these events do not reflect patient safety in the context with which it is currently understood.

Refer to the "Technical Note: In-hospital Hip Fracture" document listed in the "Companion Documents" field, which describes case selection and inclusions/exclusions criteria.

### RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

### DENOMINATOR (INDEX) EVENT

Institutionalization

## **DENOMINATOR TIME WINDOW**

Time window brackets index event

## **NUMERATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

Total number of discharges coded with in-hospital hip fracture for patients age 65 and older

Refer to the "Technical Note: In-hospital Hip Fracture" document listed in the "Companion Documents" field, which describes case selection and inclusions/exclusions criteria.

### **Exclusions**

Unspecified

## **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

## **NUMERATOR TIME WINDOW**

Institutionalization

## **DATA SOURCE**

Administrative data

## **LEVEL OF DETERMINATION OF QUALITY**

Not Individual Case

## **OUTCOME TYPE**

Adverse Outcome

## **PRE-EXISTING INSTRUMENT USED**

Unspecified

## **Computation of the Measure**

## **SCORING**

Rate

## **INTERPRETATION OF SCORE**

Better quality is associated with a lower score

## **ALLOWANCE FOR PATIENT FACTORS**

Risk adjustment devised specifically for this measure/condition

## **DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS**

A logistic regression model is fitted with age, sex, whether a surgical procedure was provided, and the following preadmission comorbid conditions: cancer, seizure, syncope, stroke, coma, cardiac arrest, anoxic brain injury, poisoning, delirium and other psychosis, trauma and musculoskeletal/connective tissue disorder (MCC-8) as independent variables. Coefficients derived from the logistic model are used to calculate the probability of in-hospital hip fracture for each case (episode). The expected number of in-hospital hip fractures of a region is the sum of these case probabilities for that region. The risk adjusted in-hospital hip fracture rate (RAR) is calculated by dividing the observed number of in-hospital hip fractures of each region by the expected number of in-hospital hip fractures of the region and multiplying by the Canadian average rate. A 95 percent confidence interval for the RAR is also calculated and the method used to calculate confidence intervals is available upon request.

## **STANDARD OF COMPARISON**

External comparison at a point in time  
External comparison of time trends  
Internal time comparison

## **Evaluation of Measure Properties**

## **EXTENT OF MEASURE TESTING**

Unspecified

## **Identifying Information**

## **ORIGINAL TITLE**

In-hospital hip fracture rate.

## **MEASURE COLLECTION**

[Health Indicators 2008](#)

## **DEVELOPER**

Canadian Institute for Health Information

## **FUNDING SOURCE(S)**

Canadian Government

## **COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE**

*Employees:* Canadian Institute for Health Information (CIHI) Health Indicators

## **FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

None

## **ADAPTATION**

Measure was adapted from another source.

## **PARENT MEASURE**

Postoperative Hip Fracture (PSI 8) [Agency for Healthcare Research and Quality (AHRQ)]

## **RELEASE DATE**

2006 Jun

## **REVISION DATE**

2008 May

## **MEASURE STATUS**

This is the current release of the measure.

This measure updates a previous version: Canadian Institute for Health Information (CIHI). Health indicators 2007: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2007 May. 37 p.

## **SOURCE(S)**

Canadian Institute for Health Information (CIHI). Health indicators 2008: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008 May. 39 p.

## **MEASURE AVAILABILITY**

The individual measure, "In-Hospital Hip Fracture Rate," is published in "Health Indicators 2008: Definitions, Data Sources and Rationale." This document is available in Portable Document Format (PDF) from the [Canadian Institute for Health Information \(CIHI\) Web site](#).

For more information, contact CIHI at, 4110 Yonge Street, Suite 300, Toronto, Ontario, Canada, M2P 2B7; Phone: 416-481-2002; Fax: 416-481-2950; E-mail: [indicators@cihi.ca](mailto:indicators@cihi.ca); Web site: <http://www.cihi.ca/cihiweb/>.

## COMPANION DOCUMENTS

The following is available:

- Canadian Institute for Health Information (CIHI). Health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. 93 p. This document is available in Portable Document Format (PDF) from the [Canadian Institute for Health Information \(CIHI\) Web site](#).
- Canadian Institute for Health Information (CIHI). ICD-9/CCP, ICD-9-CM and ICD-10-CA/CCI codes for health indicators 2008. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008. various p. This document is available from the [CIHI Web site](#).
- Canadian Institute for Health Information (CIHI). Technical note: wait time for hip fracture surgery. [internet]. Ottawa (ON): Canadian Institute for Health Information (CIHI); [accessed 2008 Aug 15]. [2 p]. This document is available from the [CIHI Web site](#).

## NQMC STATUS

This NQMC summary was completed by ECRI Institute on October 23, 2007. The information was verified by the measure developer on November 28, 2007. This NQMC summary was updated by ECRI Institute on October 10, 2008. The information was verified by the measure developer on December 18, 2008.

## COPYRIGHT STATEMENT

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions. Use of Canadian Institute for Health Information's (CIHI) quality measure for research, private study, education, or other non-commercial purposes is permitted where full credit is given to CIHI as author and owner of the quality measure. Any use that is wholly or partly commercial in nature requires CIHI's express written permission.

For more information, contact CIHI at, 4110 Yonge Street, Suite 300, Toronto, Ontario, Canada, M2P 2B7; Phone: 416-481-2002; Fax: 416-481-2950.

## Disclaimer

### NQMC DISCLAIMER

The National Quality Measures Clearinghouse™ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.



Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria which may be found at <http://www.qualitymeasures.ahrq.gov/about/inclusion.aspx>.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. The inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.

© 2009 National Quality Measures Clearinghouse

Date Modified: 4/6/2009

